

April 13, 1858.

Dr. Gray, F.R.S., V.P., in the Chair.

The following papers were read :—

1. ON THE SNIPES' "NEIGHING" OR HUMMING NOISE, AND ON ITS TAIL-FEATHERS' SYSTEMATIC VALUE. BY W. MEVES, CONSERVATOR AT THE ZOOLOGICAL RIKS-MUSEUM IN STOCKHOLM. TRANSLATED AND COMMUNICATED BY JOHN WOLLEY, JUN., ESQ., F.Z.S.

On the origin of the neighing sound which accompanies the single Snipe's (*Scelopax gallinago*, L.) play—flight during pairing time—opinions are various. Bechstein thought that it was produced by means of the beak; Naumann and others, again, that it originated in powerful strokes of the wing: but since Pralle* in Hanover observed that the bird makes heard its well-known song or cry, which he expresses with the words "gick jack, gick jack!" at the same time with the neighing sound, it seemed to be settled that the latter is not produced through the throat. In the mean time I have remarked with surprise, that the humming sound could never be observed whilst the bird was flying upwards, at which time the tail is closed; but only when it was casting itself downwards in a slanting direction, with the tail strongly spread out.

The peculiar form of the tail-feathers in some foreign species nearly allied to our Snipe (for example, *S. javensis*) encouraged the notion, that the tail, if not alone, at all events in a considerable degree, conduced to the production of the sound. On a closer examination of the tail-feathers of our common species, I found the first (outer) feather, especially, very peculiarly constructed; the shaft, uncommonly stiff, sabre-shaped; the rays of the web strongly bound together and very long, the longest reaching nearly three-fourths of the whole length of the web, these rays lying along (or spanning from end to end of the curve of) the shaft, like the strings of a musical instrument (Fig. 1). If one blows from the outer side upon the broad web it comes into vibration, and a sound is heard, which, though fainter, resembles very closely the well-known neighing.

But to convince one's self fully that it is the first feather which produces the peculiar sound, it is only necessary carefully to pluck out such a one, to fasten its shaft with fine thread to a piece of steel wire a tenth of an inch in diameter and a foot long, and then to fix this at the end of a 4-foot stick. If now one draws the feather, with its outer side forward, sharply through the air, at the same time making some short movements or shakings of the arm so as to represent the shivering motion of the wings during flight, one produces the neighing sound with the most astonishing exactness.

* Naumannia.

If one wishes to hear the humming of both feathers at once, as must be the case from the flying bird, this also can be managed by a simple contrivance. One takes a small stick, and fastens at the side of the smaller end a piece of burnt steel wire in the form of a fork; one binds to each point a side tail-feather; one bends the wire so that the feathers receive the same direction which they do in the spreading of the tail as the bird sinks itself in flight; and then with this apparatus one draws the feathers through the air, as before.

Such a sound, but in another tone, is produced when we experiment with the tail-feathers of other kinds of Snipe. But in *S. major*, *capensis*, and *frenata* are found four humming-feathers (*surr pennor*) on each side, which are considerably shorter than in the species we have been speaking of. *Scolopax javensis* has eight on each side, which are extremely narrow and very stiff.

Since in both sexes these feathers have the same form, it is clear that both can produce the humming noise; and by means of experiment I have convinced myself that it is so. But as the feathers of the hen are generally less than those of the cock bird, the noise also made by them is not so deep as in the other case. Professor Nilsson announces, that in the female of the Single Snipe a neighing noise has been already observed.

It would be interesting if travelling ornithologists would in future make observations on the foreign species in a state of nature. It ought to be found that these also have a neighing or humming noise, but differing considerably from that of our species.

Besides the significance which these tail-feathers have as a kind of musical instrument, their form may give a very weighty character in the determination of species standing very near one another, which have been looked upon as varieties.

To call attention to this subject, I have caused to be drawn the tail-feathers of several species. They are the following:—

Fig. 1. *Scolopax (Telmatias, Boie) gallinago*, L.

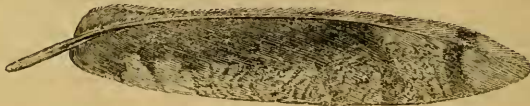
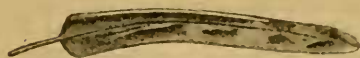


Fig. 2. *Scolopax (Telmatias) capensis*.



Fig. 3. *Scolopax (Telmatius) frenata*, Illig.Fig. 4. *Scolopax (Telmatius) javensis*.Fig. 5. *Scolopax (Telmatius) major*, L.Fig. 6. *Scolopax (Philolimnos, Brehm) gallinula*, L.

The structure of the tail-feathers in the last-named species differs considerably from that of the others; it gives upon experiment no humming sound; and all the feathers of the tail are, as in *Scolopax rusticola*, formed pretty much like one another.

If it be considered desirable to divide the Linnean genus *Scolopax* into subgenera, I should propose to class those together which have musical feathers in the tail, under the name *Odura*.

The interesting discovery recorded in the above paper was first announced by M. Meves in an account of the birds observed by himself during a visit to the island of Gottland in the summer of the year 1856, which account appeared in a publication of the Vetenskaps Akademi at Stockholm the following winter.

In the succeeding summer M. Meves kindly showed me his experiments. The mysterious noise of the wilderness was reproduced in a little room in the middle of Stockholm. First the deep bleat now shown to proceed from the male Snipe, and then the fainter bleat of the female, both most strikingly true to nature, neither producible with any other feathers than the outer ones of the tail.

I could not resist asking M. Meves the impertinent question, how, issuing forth from the town for a summer ramble, he came to discover what all the field-naturalists and sportsmen of England and other countries had, for the last century at least, been in vain trying to make out, straining their eyes, and puzzling their wits? He freely explained to me how, in a number of 'Naumannia,' an accidental misprint of the word representing tail-feathers instead of wing-feathers—a mistake which another author took seriously, and ridiculed—first led him to think on the subject. He subsequently examined in the Museum the tail-feathers of various species of Snipe, remarked their structure, and reasoned upon it. Then he blew upon them, and fixed them on levers that he might wave them with greater force through the air; and at the same time he made more careful observations than he had before done of the living birds in the breeding season. In short, in him the obscure hint was thrown upon fruitful ground, whilst in a hundred other minds it had failed to come to life. At my invitation, M. Meves wrote for the Zoological Society of London the paper which I have here translated.

JOHN WOLLEY.

April, 1858.

2. SYNOPSIS OF THE AMERICAN ANT-BIRDS (FORMICARIIDÆ).
 BY PHILIP LUTLEY SCLATER, M.A., F.L.S., ETC. (PART I.,
 CONTAINING THE THAMNOPHILINÆ.)

(Aves, Pl. CXXXIX.—CXL.)

Although Prince Max von Neuwied and M. d'Orbigny both recognized the error of separating the genera *Thamophilus* and *Conopophaga* from their natural allies the *Formicarii*, and placing them, one in the family *Laniidæ*, and the other among the *Muscicapidæ* (as has been done by Swainson and other authors), Müller, in his celebrated article "Ueber die bisher unbekanntten typischen Verschiedenheiten der Stimmorgane der Passerinen," was the first to constitute this and the other peculiar groups of American *Tracheophonæ* on an intelligible basis. Cabanis and Burmeister have since followed out Müller's ideas, and reduced the genera belonging to this family into a better-organized series. The arrangement of these birds, employed in the present attempt at a synopsis of the numerous and very imperfectly known species, does not materially differ from that which the latter of these authors has employed in his 'Uebersicht der Thiere Brasiliens.' In one respect, however, I have adhered more closely to Müller's ideas; that is, in excluding the genus *Scytalopus* and its allies, for which Müller created the family name "*Scytalopidæ*.*" I have already stated in these Proceedings†, that

* More correctly written *Scytalopodidæ*—the derivation being σκύταλον and ποδός.

† See P. Z. S. 1858, p. 69.